

REMARKS

Claim 1 has been amended to incorporate the subject matter of Claim 3. Claim 3 is accordingly canceled. No new matter is added by this Amendment, and Applicant respectfully submits that entry of the Amendment is proper.

Response to Rejection Under 35 U.S.C. § 103(a) based on JP '308 or JP '209 in view of JP '609, JP '441, and Taguchi

Claims 1-4 have been rejected under 35 U.S.C. § 103 as allegedly being unpatentable over JP 09-272308 (JP '308) or JP 10-297209 (JP '209) taken in view of JP 2001-260609 (JP '609), JP 2614441 (JP '441) and U.S. Patent Application Publication No. 2002/0134480 to Taguchi et al. (hereinafter "Taguchi"), optionally further in view of at least one of GB 2072576 (GB '576) or U.S. Patent No. 2,575,249 to Connell et al. (hereinafter "Connell"). Applicant respectfully submits that the presently claimed invention is not obvious over the cited references.

The present claims recite a heavy duty pneumatic tire comprising a carcass layer, an innerliner layer and an inner face protection layer arranged therebetween, characterized in that the inner face protection layer is comprised of a rubber layer A adjacent to the innerliner layer and a rubber layer B adjacent to the carcass layer. Each rubber composition of the carcass layer and the rubber layer B is compounded with a rubber component, sulfur and a cobalt compound of an organic acid, and an amount of sulfur compounded satisfies the following equations (I) and (II):

$$S_A < S_B \leq S_C \quad \cdots \cdots (I)$$

$$2 \leq S_A \leq 4 \quad \cdots \cdots (II)$$

In the equations, S_A , S_B , and S_C are an amount of sulfur compounded in the rubber composition constituting the rubber layer A, rubber layer B and the carcass layer, respectively, based on 100 parts by mass of the rubber component. Further, an elongation at break of the rubber composition constituting the rubber layer A is 1.00-1.45 times an elongation at break of the rubber composition constituting the rubber layer B.

In the presently claimed invention, the rubber layer adjacent to the carcass layer (i.e., the rubber layer B) has a high creep resistance and is compounded similarly to that of the carcass layer, which suppresses the influences due to the difference between the compounding composition of the rubber layer adjacent to the carcass layer and the carcass layer. In addition, the rubber layer adjacent to the innerliner layer (i.e., the rubber layer A) has a high fracture resistance even after deterioration by oxidation (see, e.g., page 3, lines 14-18 of the present specification). Accordingly, the present invention provides that (1) the creeping of the carcass rubber can be suppressed; and (2) the resistance to oxidation deterioration can be further improved while still maintaining adhesion between the ply cord and the carcass rubber (see, e.g., page 3, lines 19-21 of the present specification).

Applicant respectfully submits that a person having ordinary skill in the art would not have a reason to combine the cited references in the manner set forth in the Office Action because none of the cited references discloses or suggests the unexpected results and advantages resulting from the presently claimed invention. In particular, neither JP '308 nor JP '209 discloses or suggests the advantages resulting from the amount of sulfur in the various layers. JP '609 does not remedy this deficiency because it only discloses the presence of a single intermediate layer between the carcass layer and the innerliner layer. Similarly, none of the

other cited references teaches or suggests the advantages obtained by the presently claimed invention.

In addition, as noted at, e.g., page 5, lines 3-6 of the present specification, when an elongation at break of the rubber composition constituting the rubber layer A is 1.00-1.45 times an elongation at break of the rubber composition constituting the rubber layer B, as recited in the present claims, the fracture resistance is highly improved. The references do not disclose or teach this unexpected result, and with particular respect to the Taguchi reference, Applicant notes that this advantage is not disclosed or suggested by Taguchi.

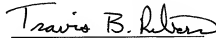
Therefore, Applicant respectfully submits that the presently claimed invention is not obvious over the cited references, and Applicant respectfully requests the reconsideration and withdrawal of this § 103 rejection.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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